

ASCE's Norman Medal To MSC Technologist

Four men, one of them an MSC aerospace technologist, have received the Norman Medal of the American Society of Civil Engineers.

The award was presented last week at the society's annual National Environmental Engineering Meeting in Houston.



CARRIER their paper "Apollo 11: Soil Mechanics Results."

Dr. Carrier is a graduate of MIT with three degrees in civil

engineering.

His current assignment in lunar soil mechanics has involved him in the development of experiments to determine the mechanical and behavioral properties of the lunar surface.

He is author or co-author of more than 20 publications and NASA reports and was an associate editor for the proceedings of the Third Lunar Science Conference.

The other three co-winners of the ASCE's oldest and most prestigious award are Nicholas C. Costes of Marshall Space Flight Center, Dr. James K. Mitchell of the University of California, and Ronald F. Scott of California Institute of Technology.



"THIS STABLE TWO'S ALL WET"—Looking not too comfortable after their dunking, Apollo 17 astronauts Cernan, Evans and Schmitt must be hoping that if they land Stable Two — upside down, that is — when they return from the moon, the uprighting bags will work. This drill, covering the event they don't work, has at least the advantage of being indoors rather than out on the Gulf of Mexico where other water egress drills are held.



VARIETY OF VISITORS — The center was an active spot this week and last for a variety of visitors that included personages such as Israel's Minister of Commerce and Industry and two Hollywood notables plus (see Page 2) some not-so-well-knowns. The visitor from Israel, above, being filled in by Deputy Director Sjöberg on the Apollo-Soyuz Test Project, was His Excellency General Haim Bar-Lev. The entertainment-world guests, talking to Astronaut Richard Crippen and Technical Assistant George Abbey, below, were Jack Benny and Abby Lane along with Miss Lane's husband, Perry Leff.



ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



Vol. 11 No. 25

October 27, 1972

Flu Shots Ready At Clinic for All MSC Personnel

Influenza immunizations are available to all on-site employees. Annual immunization is especially urged for individuals with chronic heart or respiratory diseases and employees over 45 years of age.

Individuals who were not immunized last year should obtain

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Six MSC Personnel to be Awarded AIAA Honors at November 2 Luncheon

Six MSC men will be honored at the American Astronautical Society's November 2 luncheon in Washington, five of them with awards and one as a newly elected Fellow of the Society.

The Flight Achievement Award for "achievements in flight testing which have contributed significantly to the advancement of manned space flight" goes to the Apollo 14 crew — Alan Shepard, Stuart Roosa and Edgar Mitchell.

The Randolph Lovelace II Award for "outstanding contributions in space technology"

goes to Dr. Max Faget, director of Engineering and Development.

The Melbourne W. Boynton Award for "significant research contributions to flight safety" goes jointly to Dr. Willard Hawkins, deputy director for Medical Operations, and Dr. H. J. von Beckh of the Naval Air Development Center.

Honored as a newly elected Fellow of the Society will be Astronaut Gene Cernan along with NASA Administrator Fletcher and two others.

The awards cover achievements of the year 1971.

Travelers Call for Reservations To View Apollo 17 Launch at Cape

The MSC Travelers have shaped up their plans for the charter flight to Florida to watch the Apollo 17 launch.

The bargain package — \$138 for single occupancy — includes the round-trip flight, two nights at the Langford Hotel, special box lunch en route to the launch, "reserved seats" for the liftoff, and other goodies and optional entertainments.

The trip is available to MSC and contractor personnel and their families, including spouse, dependent children, and parents if they reside in the member's home.

Reservations on a first-come first-served basis are being taken

now, with application blanks available in the lobby of Building 13.

The completed applications must be mailed to the Aerospace Employees Travel Club at P. O. Box 57324, Webster, along with a \$50 deposit per person.

The balance is due November 20, with no refunds made after November 10.

Based on a December 6 night-time launch, the charter flight will depart Houston the morning of the 6th and return Friday evening, December 8.

The trip is subject to final approval, and deposits will be held in escrow until a full plane-

(Continued On Page 2)



LITTLE PEOPLE VISIT TOO — As proud as NASA is of its highly esteemed visitors, the Center is always delighted by the presence of "little people." This photograph was taken in the visitors Information Center where various spacecrafts and space hardware are on displays.



COST REDUCTION AWARD — Philip H. Whitbeck, Director of Administration and Program Support, presented the Cost Reduction Award Plaque to Dorothy Newberry and Parker Carroll who represent the Institutional Procurement Division. This division submitted 11 actions for a dollar-saved value of \$5.1 million. The Center's goal for 1972 was 17.7 million overall.

Great Pumpkin Regatta Tomorrow And Sunday; MSC Sailors Invited

The Great Pumpkin Regatta starts tomorrow at noon! For the uninitiated, that's the two-day boat race program Saturday and Sunday under the auspices of the Clear Lake Sailing Club.

For MSC sailors it's a chance to match skills with other boatmen in half a dozen classes or more.

Registration at Race Headquarters, the big green building at the far end of Harris County Park on Clear Lake just across from the Boys Home, is 8:30 to 10:30 tomorrow morning.

Skippers Meeting is at 11:00, the first race at noon.

For more information: Rex Ritz at MSC extension 5007 or Malcolm Jones at 3566.

JIMMY WARREN MEMORIAL BOWLING LEAGUE

Team Standing	W	L
Ball Busters	19	9
Ascenders	18	10
Hexes	18	10
Alley Oops	18	10
Spoilers	15	13
Team 9	15	13
Hertz	13½	14½
Pin Pounders	13	15
Clowns	12½	15½
Mixers	12	16
Fabricators	11½	16½
Strikeouts	11	17
Chokers	10½	17½
Jokers	10	18

High Individual Set
10-12-72 Ron Durkee Clowns 704
10-19-72 Jim Pavlosky Fabricators 696
High Individual Game
To date Pete Peterson Alley Oops 283
10-19-72 Frank Morgan Alley Oops 274

Game	Name	Set
247-228	Ron Durkee	668
201-234	Jim Pavlosky	624
256	Frank Morgan	606
237	Dwayne Atwell	
221	Paul Cooper	598
235	Bill Atwell	
233	Cecil Dorsey	
230	Gail Blalock	
228	Al Spivey	



ACCEPTS TROPHY — Charles Dunn, Space Center Hospital Executive Director, accepts two trophies from team manager Don Lewis. The hospital sponsored team won 1st place in this summer's NASA E. E. A. "A" League and 2nd place in the Houston St. Patricks Sports Festival Invitational Tournament.

Rover to Travel Farther, Carry More on Apollo 17

The lunar roving vehicle to be carried on the last Apollo will travel about 10 kilometers (6 statute miles) farther and will have a loaded weight of 27 kilograms (60 pounds) more than previous models.

Following the lunar landing scheduled for December 11, the vehicle will carry Apollo 17 astronauts Cernan and Schmitt to various locations in the Taurus-Littrow area of the Moon.

Present plans call for the Apollo 17 lunar rover to cover about 37 kilometers (23 statute miles).

Astronauts John Young and Charles Duke rode nearly 17 statute miles in the Descartes region last March, while David Scott and James Irwin traveled just over 17 statute miles in the Hadley-Apennine area when the first LRV was used in August 1971.

A significant addition to the Apollo 17 LRV is a traverse gravimeter which will measure variations in subsurface structure and furnish data on whether the Taurus mountains have deep roots or are merely deposits on a uniform subsurface.

The gravimeter, a very sensitive instrument, will be carried on the rear deck of the LRV.

Also on the LRV will be a surface electrical properties experiment to measure physical properties of the lunar interior down to about a kilometer in depth.

Travelers—
(Continued From Page 1)
load is assured.
For more information on the tour: Dorothy Refuse at MSC extension 3166 or Bill Wylie at 333-3133 extension 3171.



FIRST ANNUAL BUSINESS CLINIC — NASA programs and procurement opportunities were discussed with many of the 400 attendees at the Business Clinic in Federal Procurement co-sponsored by MSC at the Albert Thomas Convention Center two weeks ago. Armed with the facts and figures necessary for such a presentation were, from left, Earl Vandiver of General Administration, and H. T. Christman, James Neal, Betty Hall and Jose Perez of MSC.

Wedding Bond.

Take stock in America.
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ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS

The **Roundup** is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

Photographer: A. "Pat" Patnesky

Roundup Swap-Shop

Swap Shop advertising is available to MSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in, ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

MISCELLANEOUS

Leftover bldg materials, insulation shutters, door windows, glass shower doors, ceiling tile \$75 or best offer. 333-2916.
Sears 3-way Exercycle, friction control, cost approx \$80 sell \$35. Rogers 472-2983.
Complete set left-hand golf clubs & bag, Wilson Sam Snead Signature, gd cndn \$75. Neau 483-7491.
Garage sale Oct. 27-28 Nassau Bay 18502 Capetown Dr. childrens clothes & toys xint cndn, adult clothing, baby items, furn, dishes, gift items.
J. C. Higgins Model 20 pump 12 ga, vent rib, var choke, clean \$75. Campbell 481-1826.
Wilson Sam Snead youth golf clubs, putter, 3-5-7-9 irons, 2 woods w/ plaid bag & glove \$50. 482-3909.
Twin-fin 6' surfboard \$50. Morris 481-3900.
12 ga Ted Williams Winchester pump shotgun, 1k new \$60. Bailey 471-3097.
Aquarium w/ light, filter, pump \$12 2-pc. full wet suit pfc cndn \$40, surfboard \$40. Gillen 334-2993.
Ham rig incl 75 meter transceiver, pwr supply & antenna setup \$159. Morris 481-3900.
Givoletti accordion, 120 bass, 5-2 switch, 1 1/2 yrs old, new \$595 sell \$395. 946-9304.
4x5 Crown Graphic press camera, f4.7 Kodak Ektar lens, synch shutter & rangefinder, 10 filmholders, carrying case & other access \$75. 334-1869 after 5.
Wallensak Model 1280 stereo tape recorder w/ detach speakers, reel-reel, 7 1/2 & 3 3/4 ips, w/ 24 mostly classic prerecorded tapes, \$370 value \$250. 334-1869 after 5.
1970 World Book set \$150 or trade for Childcraft, 1969 encyc set \$25. Underhill 488-6122 after 4:30.

HOUSEHOLD ARTICLES

Kenmore port dishwasher needs handle \$70, dbl end w/ firm mat & bookcase head-bd. \$25, tan vinyl sofa makes dbl bed \$25, snal bed frames & springs \$10, Coldspot 2- or refrig set up for icemaker, white, \$180, Caloric gas range ultra-deluxe model, white, \$250. Underhill 488-6122 after 4:30.
Trundle bed w/ new orthopedic mat & box springs \$95, child's small oak chest of drawers \$20, child's oak bookcase \$10. Ream 334-2215.
Ethan Allen rocking loveseat \$65, recliner \$20, child's platform rocker \$5, chalk desk \$5, E. Am. floor lamp \$10. Jones 474-3510.
Hammond organ console Model E143, cherry wood, 1k new, 4 yrs old \$2400. Norris 334-1777.
GE frost-free refrig 10 yrs old, 2-dr, xint cndn \$100. Orange area rug 9x12 \$20, in-door-outdoor area rug 9x12 \$10. Smith 488-3238.
Baby safety service hi chair makes into 5 pieces \$35, mape chest of drawers \$30, yellow milk can \$15. 472-8208.
French Prov single canopy bed, triple dresser incl matching canopy & cover used 6 mo, sprad sham \$150 incl box spr & mattress. 941-7461.
GE refrig, white, xint cndn, 2-dr w/ freezer top \$100 & your old refrig. Smith 488-3238.
Dinetto table, 2-pc sofa, stove \$25 for all. Hagan 477-5025 after 5.

VEHICLES

71 Honda CB 175 gd cndn w/ rack, only 2300 mi. \$400. Ferguson 488-2329.
20 Roadmaster boys bike, banana seat, hi back, basket, gd cndn \$10. 333-2916.
8' cabover camper, ideal for 1/2 ton pickup, loaded w/ extras incl power vent-a-hood, pottie, jorks & many others. 482-7960.
70 Ford 1/2-ton pickup, radio, XLT, air, auto, power, son joined Air Force, \$100 above wholesale 733-7667.
71 Honda CB 100 71 1/2 Honda CL 350 K3 w/ Wixom fairing & luggage rack, both owned by adults, xint cndn, 4 helmets also avail. McCreary 946-5285.
For rent day or wk 72 Jayco hdtv fold-down camper w/ kitchen, ice box, slps 8, less than commerc rates. Kilbourn 482-7879 after 5.
67 Catalina conv xint mech & phys cndn, 46K mi, pwr steer & brakes, air, radio, new top & gd tires \$850 firm. 534-5027.
69 Sedan DeVille, gold, all pwr options plus stereo, original owner 488-5159.
63 Pontiac 4-dr sdn, clean, runs well, well maintained. 489-2801.
65 Chevella 2-dr hdtv V-8, 3-spd, buckets \$450 or best offer. 332-2093 after 5.
71 Penton 125 motorcycle xint cndn \$425. Bran 333-3814.
72 1/2 Honda CB 450cc, red, crash bars, 1250 mi \$1000. Rogers 483-3576.
57 classic Triumph TR3, must sell, \$600 or best offer. 333-3186.
Battery driven Eldon dragster, vry la mi, 1 yr old, charger incl \$20. Unicycle, 1 yr charger incl \$20. Unicycle, 1 yr old, \$15. Whitnch 481-2854.
67 Buick Electra 225, full pwr, 1 owner, la mi, xint cndn \$1495. 471-0164 or 471-2447.
71 Honda SL 100 & SL 175, la mi, xint cndn \$350 ea. Milton 334-1294.
Go-kart w/ MC 91A engine, hyd brakes, gearbox, xpsn chamber, grt shape, race ready \$275 or best offer. Wilson 334-1895.
69 Buick Wildcat 4-dr hdtv, pwr steer & brake, seats & windows, stereo, new tires & battery. \$2195. Cobb 333-4109.
TR3 rebuilt mech, new top, gd body, interior 60"; restored, grt tires, side curtains, parts & manual \$1200. Frere 474-2147.
66 Pontiac Catalina sta wgn 6 psngr, clean, gd mech cndn \$850. 334-1760.
72 Buick Skylark 350 2-dr, air, auto, pwr steer, side moldings, 12K mi \$3195 firm, trade possible. 488-6122 after 4:30.
71 Toyota Corona Mark II 2-dr, air, side moldings, C-78 oversize tires, dealer serviced 1K mi \$2195 firm, trade possible. Underhill 488-6122 after 4:30.
70 Honda 350cc xint cndn \$600. 479-7273.
72 Korman Ghia hdtv, 18K mi, xint cndn. Bond 334-2418.
27" boys 10 spd bike w/ center-pull brake, ridden less than 20 mi, cost \$85 sell \$65. Ladies 26" std bike, gd cndn but no seat. Ward 946-2604 after 5.
70 Yamaha 360 Enduro in mint cndn 1300 mi \$595. Ream 334-2215.

70 Riviera GS loaded w/ all options incl vinyl top, FM stereo, auto spc cntrl, all pwr, etc \$3100. Land 482-6904.
70 Pontiac Catalina, 400 cu in engine, reg gas, deluxe heating & air, vinyl top, 2-dr hdtv, turbahydraulic, pwr steer & brake, vry gd cndn \$2100. 332-3361.
65 Fairlane sta wgn 4-dr, air, auto, radio, 6-cyl \$400. Groves 498-4787.
64 chev Bel Aire sta wgn vry clean, auto, air, gd cndn. Eggleston 334-2897.
Large mini-bike, 5 full hp w/ torque cnvtrr & motorcycle tank \$149. Morris 481-3900.
70 Triumph Trophy 250 Scrambler, 6K mi, new upper end, nev'r raced, beaut shape \$380 334-2993.
72 Celica Toyota, air mags, 4-spd, heat, radio and super tune kit \$2800. 488-0060 x305 or 474-3525.

WANTED

Spinet or console piano, 5 to 10hp outboard motor, table saw. Marlow 946-3497.
Join or form car pool using Gulf Fwy fm vicin Broadway-Pk Place Cir to Bldg 2 8:30 - 5. Johnson 463-4758.
Barbell weights, iron only, no plastic or plastic covered pls. 333-4949.
Two bowlers w/ 160 or above ave for Thurs nite (6:30) league. Blalock 483-4721.
5, 10 & 25 lb metal exercising weights, no plastic, pay 15c lb. Kiehn 483-5121.
1 or 2 passengers fly Chicago for Thanksgiving, share expenses. Glover 944-4863.
Spanish or contemp 4-2 1/2-2 Oakbrook West or equiv. Bullock 774-6602.
Clean 20 ga pump & 410 ga pump or bolt action guns in gd cndn. Campbell 481-1826.
Snow ski rack for auto top. Moser 334-2060.

BOATS

Air boat, Corvair engine, special Ouachita hull, galv trailer, xint cndn \$1500. 334-2060 or 488-4453.
20' Highlander, day sailer, gd cndn w/ trailer. 332-4732.
New 125hp outboard or 19' fiberglass boat w/ trailer & shrimp equip. 332-4732.
62 Chris-Craft 26' cabin cruiser, solid mahog hull, rebuilt 283, 18' shrimp trawl incl etc. \$3000. Saulietis 488-5344.
14' runabout, glassed hull, 30hp Johnson, trailer, vry gd cndn. 488-3385.

PETS

Male full-blooded Pekinese 2 1/2 yrs old, shots, license, lt beige color \$25. Summers 944-5944.
AKC white shepherd puppies, beautiful snow white fur balls, wormed & shots \$100. Abel 946-8245.
Egyptian Spitz 6 wks old all-white male, small frame, good Christmas present \$30. 472-5310 after 5:30.
Beautiful half-grown all-white cat, 6 wks old kitten, both free. 482-6058.

PROPERTY & RENTALS

Dickinson Bayou contemporary 3-2 1/2 w/ den, family rm, fire, dbl carport & workshop, wooded lot, bulkhead & boathouse, by owner. 534-6772.
3-2-2 plus study, formal liv & din, new appliances, carpet and wallpaper, wooded lot, El Lago. Moser 334-2260.

LATE ENTRIES

Classic Colt .38 Police Special, nickel plated, w/ box shells \$110. Roundupx5111.
71 Toyota 4-dr w/ air, radio, 29K mi \$1975. Allegeier 333-4627.

Safety Reminder To Halloweeners

The Safety Office reminds MSC parents that trick-or-treat night could end up being a tragic trick on unsuspecting kids. To help prevent that, Safety advises these precautions:

Keep costumes light in color for nighttime visibility, and if you are driving be extra wary;

Keep candle-lighted jack-o-lanterns away from flammables;

Accompany your children on trick-or-treat rounds and stay in your own neighborhood;

Homes where little ghosts are welcome generally are well lighted, so avoid darkened houses;

Visits to homes of known cranks or adults who are not always tolerant of children should not be allowed;

Children should be instructed not to eat treats until parents have examined them — candy with loose or torn wrappers should be discarded, fruit should be washed and cut into small pieces, and home-made candy and cookies should be looked at carefully.

Custom-made waterbed frame \$50. 641-3494 or 6377 after 6.
Sacrifice price to good home housebroken male AKC Lhasa Apso, owner allergic, also kitten free to good home. 479-2190.
Munsey oven xint cndn 10 mo old, new \$40 sell \$20. Smith 488-3238.
Skis, brand new never used Fisher Super-glas RSL 205 \$150. Cozens 664-6438.
Retliner chair \$30, 9 x 12 brown tone oval braided rug \$7.50, gold velvet occasional chair \$5, blond Formica coffee table \$3.50, step Formica end tables \$5 ea, 71 Heathkit trail bike \$165, eec epace heaters \$5 ea, bunk beds w/ steel springs \$15 st, 36" square mirror \$5, set 110 lb weights \$12.50, as-is wheelbarrow \$2.50 Rieken 544-3736.
154' fiberglass boat w/ 22hp elec start ab, new battery, trailer cushions, anchor life jackets & convert top 72 licenses \$495. Rieken 554-3736.
26" x 30" interior doors & frames \$5 ea. Rieken 554-3736.
GE electric range, white w/ oversize oven, 72 Vega Sta wgn 12,000 miles 2-dr, auto air radio gold color, Want canoe in gd cndn. Bradley 944-4632.

Flu Shots—

(Continued From Page 1)

their first injection now and a second in 60 days.

Anyone who was immunized last year should receive a booster during the first part of November.

Influenza inoculations will be available on a drop-in basis Monday through Friday from 10:00-11:30 A.M. and 3:00-4:30 P.M. at the MSC Clinic, Bldg. 8.

Precaution: Individuals allergic to eggs or egg products must not take these immunizations.

Those who are pregnant should get their immunizations from their personal physicians.

Food Technology Study Contract Goes to Pillsbury

A study contract to analyze "state-of-the-art advances in space food technology," for application in the Space Shuttle program has been awarded to The Pillsbury Company, Minneapolis.

The work will be done for the Manned Spacecraft Center. MSC has awarded \$139,500, in technology funds for the performance of the study.

In addition to food studies, the construction of a life size mockup of the galley is to be a part of the effort.

The mockup will be used for display and demonstration of flight food systems.

It will not contain heating or refrigeration characteristics, but will be constructed so that it can be readily disassembled and packaged for shipping.

Objective of the study is to identify the best food items and types for the crew, flight passengers and for the ground alert crew, that service the Space Shuttle orbiter.

A firm-fixed-price contract has been issued.

It is to be concluded January 18, 1974, with delivery of reports and the mockup.

MSC's Biomedical Research Division will monitor the contract.

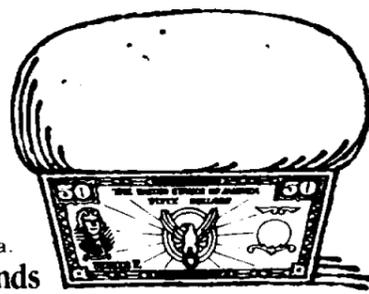
Carolina To Keys

This montage of nine pictures was compiled from two passes on consecutive days by NASA's Earth Resources Technology Satellite (ERTS-1), from an altitude of 915 kilometers (569 miles). The picture was made by infrared sunlight measured with the multispectral scanner, and it extends from Georgetown, S. C. to the Florida 'Keys. On this type of imagery water areas are characteristically dark, and vegetated areas are very light, depending on the type and density of the vegetation.



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Emblem for Last Apollo Sums Up Programs Past, Future

Apollo, the Greek god of the Sun, dominates the emblem designed for the final lunar landing mission which bears his name.

The Apollo 17 crew, in selecting their mission emblem, have chosen not to emphasize finality but rather the beginning of the golden age of space flight that their flight will usher in.

In the emblem, Apollo gazes toward Saturn and a galaxy which symbolizes man's goals in space will someday include the planets and perhaps even the stars.

Like their predecessors in the Mercury and Gemini programs, each Apollo crew has selected an emblem that symbolically depicts some particular aspect of their flight.

The emblem for the first manned Apollo flight in October, 1967, shows the Apollo 7 command and service module passing over the Western Hemisphere in Earth orbit.

The Roman numeral VII is superimposed on the Pacific Ocean with the surnames of Walter Schirra, Don Eisele, and Walt Cunningham circling the Earth.

The Apollo 7 spacecraft performed flawlessly through more than 780 hours in orbit.

The Apollo 8 emblem symbolizes the major feature of the mission with the loops of a figure "8" encompassing both Earth and the Moon.

On this flight, men first flew to another body in the solar system, circling the Moon ten times.

The crew of Frank Bowman, James Lovell, and William Anders—whose names appear on the lower half of the "8"—covered 800,000 kilometers (500,000 miles) in 147 hours.

Astronauts James McDivitt, David Scott, and Russell Schweickart chose an emblem for their March, 1969, flight which exemplified its major objectives—the first manned flight of the complete Saturn V/Apollo complex.

The emblem features a Saturn V rocket encircled by an orbiting command/service module station keeping with a lunar module.

On this flight, the crew execute rendezvous and docking exercises in Earth orbit and the first

Apollo walk-in-space was performed.

With Earth in the background, The Apollo 10 emblem shows the lunar module sweeping low over the lunar surface while the command service module monitors from lunar orbit.

This mission flown in May 1969 by Tom Stafford, John

Young and Eugene Cernan tested the lunar module in the Moon's environment for the first time and was a dress rehearsal for the lunar landing.

The first lunar landing mission emblem depicts an American eagle with wings spread and clutching an olive branch about to descend to the Moon's surface.

Earth can be seen in the distance. Apollo 11 is the only lettering on the emblem selected by astronauts Neil Armstrong, Buzz Aldrin, and Michael Collins for their July 1969 mission.

The Apollo 12 emblem has a nautical theme appropriate to the mission's all-Navy crew: Astronauts Charles Conrad, Richard F.

Gordon, and Alan L. Bean.

The dominant figure of the emblem is a Yankee clipper ship approaching the Moon.

In keeping with this theme for the second lunar landing in November 1969, the crew named their command service module Yankee Clipper and the lunar module Intrepid.

The theme of the Apollo 13 emblem is the first to be based on the myth of Apollo.

Three horses pull the Sun chariot from Earth to the Moon.

The Latin phrase to the left of the horses, "Ex Luna, Scientia," translates to "From the Moon, knowledge."

Scheduled for a lunar landing in April, 1970, a service module oxygen tank ruptured when the spacecraft was 320,000 kilometers (200,000 miles) on its outbound leg to the Moon which prevented the landing.

Astronauts Jim Lovell, Jack Swigert, and Fred Haise used the lunar module (named Aquarius) as the command post and living quarters for the remainder of the flight around the Moon and back to Earth.

Astronauts Alan Shepard, Stuart Roosa, and Edgar Mitchell designed the Apollo 14 emblem which features the gold astronaut lapel pin approaching the Moon and leaving a cosmic trail from the Earth.

Astronauts who have flown in space wear gold pins while those who have not wear silver ones.

Launched in January 1971, Apollo 14 was the third manned lunar exploration mission.

The surnames of astronauts David Scott, Alfred Worden, and James Irwin are centered in the white band at the bottom of the Apollo 15 mission emblem.

The large disc in the center of the emblem has red, white and blue symbols of flight, superimposed over an artist's concept of the Hadley-Apennine landing site.

The fourth lunar landing mission, Apollo 15 launched on July 1971.

The Apollo 16 mission emblem is dominated by an eagle perched atop a red, white and blue shield superimposed on a lunar scene.

The emblem is surrounded by a blue circle of 16 stars with the crew's surnames completing the bottom of the circle.

Across the face of the shield is a gold symbol of flight, similar to that on the official NASA seal.

Apollo 16, the fifth lunar landing mission, was conducted in April 1972 by astronauts John Young, Charles Duke and Ken Mattingly.

Apollo 17, with astronauts Eugene Cernan, Ron Evans and Harrison H. Schmitt aboard is scheduled for launch on December 6, 1972.



Rapid Transit Meeting Wrapup

Tomorrow's second and final day of the "Rapid Mass Transportation for Houston-Galveston Area" at the University of Houston will feature a two-hour forum on rapid transit.

The conference, open to the public, is being sponsored by the American Institute of Aeronautics and Astronautics in cooperation with the Urban Mass Transportation Administration and the U of H.

Weatherman and Calendar Cooperate As MSC Golfers Close Regular Season

MSC golfers took advantage of a 'day off' and the beautiful weather Monday to finish up the regular season of the MSC Golf League at Inwood Forest Country Club.

Two 'fun' tournaments are scheduled in November — Nov. 4 at Bear Creek and Nov. 18 at Ellington Air Force Base Golf Club.

Flight winners in the Oct. 23 event were:

Championship - Tie for first Jim Smith 83 (71) and Sam Gloriso 85 (71), second Cliff Crouch 84 (73) and tie for fourth Bill Chase 85 (74) and Bob Reaves 84 (74).

First - Chuck Laird 89 (73) and N. Harper 90 (73), third Ed Mitros 90 (74) and fourth Bob Gordon 90 (75).

Second - Harold Epps 96 (72), second Dick Hart 99 (74), and tie for third Dick Red 93 (75) and Ben Hood 100 (75).

New flight - first Tom Strickler 77 (66), second John Lottin-

ville 88 (68), third Jim Wiltz 93 (70), and fourth Bill Keathley 90 (71).

Employee's Wife Works in Teen Exchange Program

Mrs. Clarence Humphries, wife of MSC employee, has volunteered her services to "Youth for Understanding" (YFU), an international teenage exchange program.

Since 1951, YFU has been bringing foreign students to America in exchange for some of our own youth who study abroad. The student exchange is designed to help youth communicate better on a worldwide basis.

Presently, the Humphries have taken into their home a 17 year-old young woman from Switzerland.

Anyone interested in YFU may contact Mrs. Clarence Humphries at 485-1486.

MSC PICNICKERS - VOTE!

It has been suggested that the annual picnic be held in the spring rather than fall. How do you vote?

----- Spring ----- Fall

Other comments or suggestions on improving the picnic-----

Mail your vote to Code PA, Attn: Betty Cornett